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EXAMINER

ALAUBAIDI, HAYTHIM J

ART UNIT PAPER NUMBER

2161

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/883,499

Applicant(s)

BEDELL ET AL.

Examiner

Haythim J. Alaubaidi

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12,14-21 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-20 and 26-29 is/are allowed.
- 6) ☒ Claim(s) 1,2,5-11,14-18 and 21 is/are rejected.
- 7) ☒ Claim(s) 3 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Action is a Final Office Action in response to the amendment of April 22, 2005.
2. The Examiner acknowledges the cancellation of Claims 4, 13 and 22-25.
3. The Examiner also acknowledges the newly added Claims 26-29 with no new matter added.
4. Claims 1- 3, 5-12, 14-21 and 26-29 are presented for examination following the amendment of April 22, 2005.
5. Claims 1, 10, 19, 21 and 26-29 are independent claims.
6. The Examiner acknowledges the Applicant's amendment to Claims 1, 10, 19 and 21 to overcome the 35 U.S.C. 101 rejection. The Examiner hereby withdraws all 101 rejections to claims 1, 10, 19 and 21.
7. Claims 1, 6-10, 15-18 and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine and further in view of Shwartz.
8. Claims 2, 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pouschine and further in view of Leung.
9. Claims 3 and 12 are objected to as being dependent upon a rejected base claim.
10. Claims 19-20 and 26-29 are allowed over the prior art of record.

Response to Arguments

11. Applicant's arguments filed on April 22, 2005, with respect to Claims 1-25-11 and 14-18 have been fully considered but they are not persuasive.

a. Applicant argues on pages 12-14 that Pouschine doesn't teach or suggest *"defining a query structure based upon a plurality of query assembly rules"*. The Examiner however respectfully disagrees. Pouschine, teaches a query structure assembly module based on query rules, please see (Col 4, Line 61-67; see also Figure No. 8, Elements 126, 212 and 202; see also Col 16, Lines 23-35);

b. Applicant also argues on pages 12-14 (specifically page 13) that Pouschine's reference is using the "rule" in a different sense then the "rule" in the current application. The Examiner however respectfully disagrees. The Pouschine's reference teaches the "rule" which reads on the limitations of the claim language of the current application. In addition, In response to applicant's argument that the reference fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the query assembly rules may embody functions of the base selection module 318 {current application specification, page 15, lines 11-13}; the intermediate table selection module 320 {current application specification, page 16, lines 3-5}; the intermediate table method module 322 {current application specification, page 16, lines 22-23}; and/or the join path selection module 324 {current application specification, page 17, lines 22-23}) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

c. Applicant argues on page 15 that Pouschine doesn't teach or suggest "*the query assembly rules being used by the query structure assembly module to evaluate the desired data set*". The Examiner however respectfully disagrees.

Pouschine, teaches "*the query assembly rules being used by the query structure assembly module to evaluate the desired data set*"; please see (Col 4, Lines 57-58; see also Col 16, Lines 35-42);

d. Applicant argues on page 16 that Pouschine doesn't teach or suggest "*a syntax assembly module for defining at least one query language statement*".

The Examiner however respectfully disagrees. Pouschine, teaches "*a syntax assembly module for defining at least one query language statement*"; please see (Figure No. 8, Element 218; see also Col 16, Lines 23-26).

e. Applicant argues on page 16 that Pouschine doesn't teach or suggest "*a process optimization module for evaluating processing options based upon a database schema*". The Examiner however respectfully disagrees. Pouschine, teaches "*a process optimization module for evaluating processing options*" please see (Col 15, Lines 51-63; see also Figure No. 8, Element 214 and 128;

see also Col 5, Lines 1-5); and also teaches "*based upon a database schema*"; please (Col 14, Lines 57-60).

f. Applicant argues on page 17 that Pouschine doesn't teach or suggest any "*method for process optimization*". The Examiner however respectfully disagrees. In addition to the Examiner's comments in section (e) above, the Examiner would like to respectfully direct the Applicant's attention to the first line of the first paragraph on page 17 of the current Amendment dated April 22, 2005 where the Applicant admitted that Pouschine teaches optimization.

g. Applicant argues on page 17 that Schwartz doesn't teach or suggest evaluating a plurality of methods for generating intermediate data sets. The Examiner however respectfully disagrees. Schwartz, discloses evaluating a plurality of methods for generating intermediate data sets (Conceptual layer), please see (Figure No. 5, Element 2; see also Col 9, Lines 31-42).

12. Applicant's arguments, see page 18, first full paragraph, filed April 22, 2005, with respect to the rejection(s) of claim(s) 3, 12 and 19; have been carefully and fully considered and are persuasive.

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Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 6-10, 15-18 and 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Necholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter) and further in view of Steven Schwartz (U.S. Patent No. 5,584,024 and Schwartz hereinafter).

Regarding Claims 1, 6, 8, 10, 15 and 17, Pouschine discloses,
a query structure assembly module based on query rules (Col 4, Line 61-67; see also Figure No. 8, Elements 126, 212 and 202; see also Col 16, Lines 23-35)
the query assembly rules being used by the query structure assembly module to evaluate the desired data set (Col 4, Lines 57-58), i.e.

a Domain Modeling Rule Set Preparation Module, a query engine, and an evaluator which communicates with an SQL generator;

see also Col 16, Lines 35-42, i.e.

This query engine 132 produces the optimized execution tree 214 by combining queries and delegating calculations to the database server, whenever possible. The optimized execution tree 214 is passed to the evaluator 128 which decides whether further data is required from a relational database. If further data is required, evaluator 128

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communicates with a Relational DataBase Management System (RDBMS) 216 through an SQL generator 218.

a syntax assembly module for defining at least one query language statement

(Figure No. 8, Element 218; see also Col 16, Lines 23-26), i.e.

The method 200 starts as a Hyperstructure Query Language (HQL) query 202 which is passed to a parser 122 which converts the HQL text to a query component tree 204 which represents the component parts of the query 202.

a process optimization module for evaluating processing options (Col 15, Lines 51-63; see also Figure No. 8, Element 214 and 128; see also Col 5, Lines 1-5) based upon a database schema (Col 14, Lines 57-60), i.e.

The calculation engine 18 (see FIG. 1) uses this information, in combination with information from the other dimensions, to help determine which table to access to get data for the model 50

(Col 16, Lines 43-46), i.e.

Evaluator 128 can also communicate with a math library 220, if a calculation is required, or a sorting and processing system 222, if the process requires ordering of results or sorting in some manner

whereby at least one query language statement may assembled and run against the data source (Figure No. 8, Elements 228, 234 and 236).

Pouschine reference discloses in a second preferred embodiment all of the claimed subject matter set forth above, except the reference does not explicitly indicate in the first limitation of the current Claim the step of basing the defining of a query structure on a plurality of query assembly rules. However Pouschine discloses in another embodiment (embodiment one) the feature of basing the defining of a query structure on a plurality of query assembly rules (Col 4, Lines 36-42), Pouschine also discloses adding these rules to the query (Col 16, Lines 30-33), i.e.

These are provided to Domain Modeling Rule Set Preparation 208 which generates the domain modeling rule set 126, which are then supplied to the calculation engine 18, which takes the applicable rules and adds them to the query tree 204 to produce an execution tree with rules 212 for the query engine

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of embodiment one with embodiment two in Pouschine reference to optimize the query processing and minimize the time associated with data retrieval especially in large databases.

Pouschine reference in both embodiments discloses all of the claimed subject matter set forth above, except the reference does not explicitly indicate the module for evaluating a plurality of methods for generating intermediate data sets. However Schwartz discloses the module for evaluating a plurality of methods for generating

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intermediate data sets (Conceptual layer) (Figure No. 5, Element 2; see also Col 9, Lines 31-42), i.e.

FIG. 5 shows a high level block diagram of an intelligent query system that embodies the principles of the invention. It is composed of two parts, the Query System 1 and Conceptual Layer 2. Conceptual Layer 2 is composed of information derived from database 3, including table and column information, and information entered by an administrator to provide more intuitive access to the user. Query System 1 uses the information from Conceptual Layer 2 as well as general knowledge about SQL and database querying to limit the user in building queries to only those queries which will produce semantically correct results.

and the ability to reuse them (Figure No. 5), i.e.

specific queries are coded and made available to users via question lists. For example, FIG. 3B shows a simple screen containing a list of predefined queries. Users can choose to run queries directly from the list or make minor modifications to the query before running it.

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Pouschine with the teachings of Shwartz to include intermediate data sets in order to optimize the query process through simplifying the query language.

Regarding Claims 7 and 16, Pouschine discloses accessing a syntax description (Col 14, Lines 9-13), i.e.

A SQL Audit facility allows a user to audit HQL queries that are sent from the client to the server and view the series of SQL queries that were generated by the Calculation Engine in the fulfillment of the HQL query.

Regarding Claims 9 and 18, Pouschine discloses wherein the system is a component in an online analytical processing system (Col 11, Lines 49-61; see also Col 32, Lines 63-66).

15. Claims 2, 5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Necholas Pouschine (U.S. Patent No. 5,918,232 and Pouschine hereinafter), and further in view of Ting Leung (U.S. Patent No. 6,574,623 and Leung hereinafter).

Regarding Claims 2, 5, 11 and 14, Pouschine reference discloses all of the claimed subject matter set forth above (the limitations of Claim 1), except the reference does not explicitly indicate the step of evaluating the size of a selected set of tables, nor does it explicitly indicate the length of the selected path. However Leung discloses evaluating the size of a selected set of tables and the length of the selected path (Col 4, Lines 18-25), i.e.

Generally, the SQL statements received as input specify only the desired data, but not how to retrieve the data. ***This step considers both the available access paths*** (indexes, sequential reads, etc.) and system held statistics on the data to be accessed (the size of the table, the number of distinct values in a particular column, etc.), to choose what it considers to be the most efficient access path for the query

Given the intended broad application of the Pouschine system, it would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to

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modify the teachings of Pouschine with the teachings of Leung to obtain the query results in the quickest way possible (the shortest path to the data source) and from the smallest table size as to minimize the time spent in scanning the data table for the desired information, which leads to increase the system performance by not holding-up the resources.

Regarding Claim 21, the limitations of this claim is similar in scope to the rejected claim 1, above. In addition Pouschine teaches the feature of evaluating during the construction of the query (Col 16, Lines 35-42), i.e.

This query engine 132 produces the optimized execution tree 214 by combining queries and delegating calculations to the database server, whenever possible. The optimized execution tree 214 is passed to the evaluator 128 which decides whether further data is required from a relational database. If further data is required, evaluator 128 communicates with a Relational DataBase Management System (RDBMS) 216 through an SQL generator 218.

Allowable Subject Matter

16. Claims 3 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is the Examiner's statement of reasons for the indication of allowable subject matter:

Regarding Claims 3 and 12, Applicant's particular system and associated methods in retrieving and processing data sets from one or more data sources is wherein the process optimization module includes an intermediate data processing selection module for evaluating the reusability of an intermediate data set in returning the defined data result set in combination with the other limitations of the claims, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record or that encountered in searching of the prior art.

18. Claim 19 is allowed over the prior art of record for the same reason indicated in objecting to Claims 3 and 12; and in combination with all of the other limitations of claim 19, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record or that encountered in searching of the prior art.

Dependent Claim 20 being further limiting to independent Claim 19 definite and enabled by the Specification is also allowed.

19. Claims 26-29 are allowed over the prior art of record.

20. The following is the Examiner's statement of reasons for the indication of allowable subject matter:

Regarding Claims 22-25, Applicant's particular system, readable medium and associated methods in retrieving and processing data sets from one or more data

sources is wherein the process optimization module's evaluation of a plurality of methods for generating intermediate data sets comprises determining whether creation of a permanent table, temporary table, view, derived table, or sub-query is the most efficient method for handling intermediate data calculations in combination with the other limitations of the claims, was not disclosed by, would not have been obvious over, nor would have been fairly suggested by the prior art of record or that encountered in searching of the prior art.

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Points of Contact

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haythim J. Alaubaidi whose telephone number is (571) 272-4014. The examiner can normally be reached on Monday - Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (571) 272-4023.

Any response to this office action should be mailed to:

The Commissioner of Patents and Trademarks, Washington, D.C. 20231 or telefax at our fax number (703) 872-9306.

Please note on July 15, 2005, the Central Facsimile (FAX) Number will change from 703-872-9306 to 571-273-8300.

Hand-delivered responses should be brought to the Customer Service Window of the Randolph Building at 401 Dulany Street, Alexandria, VA 22314

Haythim J. Alaubaidi


FRANTZ COBY
PRIMARY EXAMINER

Patent Examiner
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Art Unit 2161